Illinois Department of PUBLIC HEALTH

Pat Quinn, Governor
LaMar Hasbrouck, MD, MPH, Director

122 S. Michigan Ave., Suite 700 • Chicago, IL 60603-6119 • www.idph.state.il.us

Methicillin-Resistant *Staphylococcus aureus* (MRSA) and *Clostridium difficile* Infections Reporting in Illinois Acute Care Hospitals, 2013

As of January 1, 2012, all Illinois hospitals began mandated reporting of blood cultures positive for MRSA using the Center for Disease Control and Prevention's National Healthcare Safety Network (NHSN) Multidrug-Resistant Organizm (MDRO) Laboratory-identified (LabID) Event module. The LabID event surveillance method enables facilities to report proxy measures for healthcare acquisition of infections based on data obtained from the laboratory without clinical evaluation of the patient.

MDRO data are summarized using the standardized infection ratio(SIR), a summary statistic used to measure relative difference in healthcare facility-onset (HO) MDRO LABID Events occurrence during a reporting period, in this case 2013, compared to a common referent period (national data collected during 2010-2011).[1] The standardized infection ratio adjusts for factors found to be significant in predicting HO MDRO infections such as, the type of testing used at the facility, medical school affiliation, facility bed size, and the prevalence rate of Community Onset (CO) MRSA or CO CDI using a risk model.[1] For additional information on Standardized Infection Ratios (SIRs), and confidence intervals (CIs), see the methodology section of the Illinois Hospital Report Card website.

Table 1. Summary of HO MRSA bloodstream infections Data, 2012-2013

Reporting Year	# Facilities Reporting	# MRSA Infections (Observed)	# MRSA Infections (Predicted)	SIR (95% Conf. Interval)	% Change (SIR) (95% Conf. Interval)	p-value	Statistical Interpretation (% Change)
2012	179	358	419.80	0.853 (0.768, 0.945)	16.2% (0.718, 0.978)	0.0251	Significant Decrease
2013	183	293	408.56	0.715 (0.636, 0.800)			

Table 1 provides a snapshot summary of HO MRSA bloodstream infections in Illinois acute care hospitals from 2012 through 2013. For 2013, 293 HO MRSA infections were reported compared to 409 predicted, for an SIR of 0.715 (95% CI 0.636, 0. 800). This translates to a significant reduction of 28% compared to the national referent period noted above. In addition, there was a significant decrease of 16.2% in MRSA SIR compared to the previous year (2012).

Table 2. Summary of HO CDI infections Data, 2012-2013

Reporting Year	# of Facilities Reporting	# CDI Infections (Observed)	# CDI Infections (Predicted)	SIR (95% Conf. Interval)	% Change (SIR) (95% Conf. Interval)	p-value	Statistical Interpretation (% Change)
2012	179	4620	4994.79	0.925 (0.899, 0.952)	2.3% (0.938, 1.019)	0.279	Not Significant
2013	183	4466	4939.25	0.904 (0.878, 0.931)			

Table 2 provides a snapshot summary of HO CDI in Illinois acute care hospitals from 2012 through 2013. For 2013, 4466 HO CDI were reported compared to 4939 predicted, for an SIR of 0.904 (95% CI 0.878, 0. 931). This translates to a significant reduction of 9.6% compared to the national referent period noted above. In addition, there was a decrease of 2.3% in CDI SIR compared to the previous year (2012). However, this reduction is not statistically significant (p-value=0.279).

Summary

In 2013, the overall percent decrease in the number of HO MRSA infections reported in Illinois acute care hospitals is statistically significant. However, the change decrease from the previous reporting year for HO CDI was not significant, thus, underscoring the need for continued vigilance to reduce HO CDI rates in hospitals in Illinois.

References:

[1] Dudeck MA, Weiner LM, Malpiedi PJ, et al. Risk Adjustment for Healthcare Facility-Onset C. difficile and MRSA Bacteremia Laboratory-identified Event Reporting in NHSN. Published March 12, 2013. Available at: http://www.cdc.gov/nhsn/pdfs/mrsa-cdi/RiskAdjustment-MRSA-CDI.pdf